

**Remarks/Arguments**

Applicants have received and carefully reviewed the Final Office Action mailed on December 18, 2006. Claims 12-26 remain pending, and claims 1-11 and 27 have been canceled without prejudice. Reconsideration and reexamination are respectfully requested.

**Interview Summary**

The undersigned would like to thank the Examiner for the courtesies extended during the recent telephonic interview. Claims 1, 12 and 17 were discussed, but no agreement was reached. Specifically with respect to claim 12, the Examiner noted that the language does not preclude a person from performing the recited steps.

**Claim Rejections**

On page 2 of the Final Office Action, claims 1-4, 6-12, 15, 18-22 and 24-26 were rejected under 35 U.S.C. § 102(a) as being anticipated by U.S. Patent No. 6,647,302 to Pouchak (hereinafter, Pouchak '302). Also on page 2 of the Final Office Action, claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Pouchak '302 in view of U.S. Patent No. 6,536,678 to Pouchak (hereinafter, Pouchak '678).

Because we are after final, Applicants have elected to cancel claims 1-11 and 27, without prejudice, in order to narrow the issues for appeal. Furthermore, claims 12, 17-18 and 25 have been amended to recite a "computerized" method, and minor clarifying amendments have been made to claims 14, and 22-24. These amendments are believed to place the application in better form for appeal, and none of the amendments are believed to raise any new issues that were not previously before the Examiner. As such, entry of this Amendment-After-Final is respectfully requested.

Turning now to claim 12, which recites:

12. (Currently Amended) A computerized method of operating a boiler system having a plurality of stages which may be active or inactive at a given time, the method comprising the steps of:  
performing, at a first interval, a staging sequence to determine how many of the stages should be active; and  
performing, at a second interval shorter than the first interval, a modulating sequence to modulate the active stages.

As can be seen, claim 12 recites, in part, the steps of performing, at a first interval, a staging sequence to determine how many of the stages should be active; and performing, at a second interval shorter than the first interval, a modulating sequence to modulate the active stages (emphasis added). These steps do not appear to be disclosed in the cited passage of Pouchak '302, and the rejection does not appear to specifically address this claim in any manner. As the Examiner is well aware:

**TO ANTICIPATE A CLAIM, THE REFERENCE MUST TEACH EVERY ELEMENT OF THE CLAIM**

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). ... "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). (emphasis added).

(MPEP § 2131). Pouchak '302 clearly does not disclose each and every element recited in claim 12, or the identical invention in as complete detail as is contained in claim 12. As such, claim 12 cannot be anticipated by Pouchak '302. Withdrawal of the rejection is respectfully requested. *If the Examiner elects to maintain this rejection, Applicants respectfully request that the Examiner specifically point out where in Pouchak '302 each and every element recited in claim 12 can be found.* For the foregoing reasons, claim 12 along with dependent claims 13-16, are all believed to be clearly patentable over Pouchak '302.

Turning now to claim 18, which recites:

18. (Currently Amended) A computerized method of staging and modulating a boiler system in response to a load comprising the steps of: staging and modulating the system using a first control method that is adapted for achieving increased efficiency under a first set of conditions; and staging and modulating the system using a second control method that is adapted to allow cycling of the stages under a second set of conditions.

As can be seen, claim 18 recites a computerized method of staging and modulating a boiler system in response to a load comprising the steps of: staging and modulating the system using a first control method that is adapted for achieving increased efficiency under a first set of

conditions; and staging and modulating the system using a second control method that is adapted to allow cycling of the stages under a second set of conditions. These steps do not appear to be disclosed in the cited passage of Pouchak '302, and the rejection does not appear to specifically address this claim in any manner.

Pouchak '302 does not disclose each and every element recited in claim 18, or the identical invention in as complete detail as is contained in claim 18. As such, claim 18 cannot be anticipated by Pouchak '302. Withdrawal of the rejection is respectfully requested. *If the Examiner elects to maintain this rejection, Applicants respectfully request that the Examiner specifically point out where in Pouchak '302 each and every element recited in claim 18 can be found.* For these and other reasons, claim 18 along with dependent claims 19-24, are all believed to be clearly patentable over Pouchak '302.

Now turning to claim 25, which recites:

25. (Currently Amended) A computerized method of performing a staging sequence for a multi-stage boiler system in which at least one stage can be either active or inactive, the method comprising the steps of:

- observing an error measured as a difference between a temperature and a setpoint;
- observing a rate of change of the error; and
- combining the error and the rate of change of error to determine whether:
  - an inactive stage should become active;
  - an active stage should become inactive; or
  - no change in the number of active stages is necessary.

As can be seen, claim 25 recites a computerized method of performing a staging sequence for a multi-stage boiler system in which at least one stage can be either active or inactive, the method comprising: observing an error measured as a difference between a temperature and a setpoint; observing a rate of change of the error; and combining the error and the rate of change of error to determine whether: an inactive stage should become active; an active stage should become inactive; or no change in the number of active stages is necessary (emphasis added). These steps do not appear to be disclosed in the cited passage of Pouchak '302. The rejection specifically cites to column 14, lines 21-34. However, this passage does not appear to disclose the specific method steps recited in claim 25. As noted above:

**TO ANTICIPATE A CLAIM, THE REFERENCE MUST TEACH EVERY  
ELEMENT OF THE CLAIM**

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). ... "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). (emphasis added).

(MPEP § 2131). The cited passage of Pouchak '302 does not disclose each and every element recited in claim 25, or the identical invention in as complete detail as is contained in claim 25. As such, claim 25 cannot be anticipated by Pouchak '302. Withdrawal of the rejection is respectfully requested. *If the Examiner elects to maintain this rejection, Applicants respectfully request that the Examiner specifically point out where in Pouchak '302 each and every element recited in claim 25 can be found.* For these and other reasons, claim 25 along with dependent claim 26, are believed to be clearly patentable over Pouchak '302.

Claim 17 stands rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,042,431 to Shprecher et al. Claim 17 recites:

17. (Currently Amended) A computerized method of controlling a multi-stage boiler system having a number of stages that can be either active or inactive, the method comprising the steps of:  
determining whether to make an inactive stage active; and  
determining whether to make an active stage inactive; wherein:  
a first delay is provided after making an inactive stage active,  
a second delay is provided after making an active stage inactive, and  
the first delay is longer than the second delay.

As can be seen, claim 17 recites the step of: determining whether to make an inactive stage active; determining whether to make an active stage inactive; wherein: a first delay is provided after making an inactive stage active, and a second delay is provided after making an active stage inactive, wherein the first delay is longer than the second delay. Nothing in Shprecher et al. appear to teach these specific method steps.

The rejection specifically cites to column 4, line 53 to column 5, line 2 of Shprecher et al., which states:

The controls appearing inside access panel 50 are illustrated in FIG. 2. In order to make adjustments, a slide switch 52 is moved to the "setup" position, and after all adjustments are completed, it is moved to the "normal" position. When trimmer potentiometers, A1, B1, C1, or D1 are adjusted, the ignition points of the corresponding stages are adjusted. Similarly, when trimmer potentiometers A2, B2, C2, or D2 are pressed, the start of modulation threshold point for enabling the

stage after the corresponding stage is set. When pushbutton 42 is pressed repeatedly, LEDs alongside the trimmer potentiometers are lit in turn, and the setting of the corresponding trimmer potentiometer may then be read on display 40. Similarly, potentiometer E permits setting the short-cycling delay in minutes, potentiometer G allows for setback of the setpoint temperature or pressure, and potentiometer H permits adjustments of the standby time in minutes.

It appears that this passage allows the user to modify a short-cycling delay, and that the duration of a stand-by mode is adjustable. However, the stand-by mode appears to be a mode in which the boiler is indicated to be turned on, but is waiting for expiration of a delay period (e.g. on stand-by). There would appear to be no indication that a first delay is provided after making an inactive stage active and a second delay is provided after making an active stage inactive, wherein the first delay is longer than the second delay, as recited in claim 17. As noted above:

**TO ANTICIPATE A CLAIM, THE REFERENCE MUST TEACH EVERY ELEMENT OF THE CLAIM**

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). ... “The identical invention must be shown in as complete detail as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). (emphasis added).

(MPEP § 2131). The cited passage of Shprecher et al. does not disclose each and every element recited in claim 17, or the identical invention in as complete detail as is contained in claim 17. As such, claim 17 cannot be anticipated by Shprecher et al. Withdrawal of the rejection is respectfully requested.

Based on the Examiner's comments on page 3 of the Final Office Action, and with respect to claim 13, 14, and 23, the Examiner may be attempting to argue that claim 17 would be obvious over Shprecher et al. That is, the Examiner might be suggesting that the elements of claim 17 related to activating/deactivating stages for the recited time periods would be simply a matter of design choice because Applicants have not established any criticality or synergistic result which are derived from the recited configuration. Applicants do not understand this rejection, as this is clearly not the proper standard for anticipation or obviousness. That is, the Examiner appears to be suggesting that the reference fails to show something, but because Applicants have not identified a particular advantage for that which is missing, the claim is

obvious. That is simply incorrect. The proper standard for obviousness, as stated in the MPEP, is as follows:

2143.03 All Claim Limitations Must Be Taught or Suggested

To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

As can be seen, to establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. It is irrelevant whether the Applicants have indicated that certain elements lacking in the cited reference are critical or provide synergistic results which are derived from the recited configuration. In fact, it is believed that, at least because these claims recite elements that appear to be lacking in the cited Pouchak '302 and Shprecher et al. references, claim 17 would be clearly patentable over the cited references.

The only portion of the MPEP that appears to relate to the Examiner's comments is MPEP § 2144.04 VI (C), which states:

**C. Rearrangement of Parts**

*In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) (Claims to a hydraulic power press which read on the prior art except with regard to the position of the starting switch were held unpatentable because shifting the position of the starting switch would not have modified the operation of the device.); *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975) (the particular placement of a contact in a conductivity measuring device was held to be an obvious matter of design choice). ***However, "The mere fact that a worker in the art could rearrange the parts of the reference device to meet the terms of the claims on appeal is not by itself sufficient to support a finding of obviousness. The prior art must provide a motivation or reason for the worker in the art, without the benefit of appellant's specification, to make the necessary changes in the reference device."*** *Ex parte Chicago Rawhide Mfg. Co.*, 223 USPQ 351, 353 (Bd. Pat. App. & Inter. 1984).

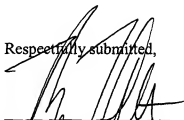
Providing a first delay after making an inactive stage active, and a second delay after making an active stage inactive, wherein the first delay is longer than the second delay is clearly more of a difference than reciting "a particular placement of a contact in a conductivity measuring device". In any event, MPEP § 2144.04 VI (C) makes clear that the mere fact that a worker in the art could rearrange the parts of the reference device to meet the terms of the claims on appeal is not

by itself sufficient to support a finding of obviousness. Instead, the prior art must provide a motivation or reason for the worker in the art, without the benefit of appellant's specification, to make the necessary changes in the reference device. In the present case, Shprecher et al. does not provide any motivation to activate/deactivate the stages in the claimed manner. For these and other reasons, claim 17 is believed to be clearly patentable over the cited prior art.

Claim 16 was not specifically addressed in the substantive portion of the Final Office Action, and it appears to only objected to. Therefore it is believed that claim 16 is in condition for allowance.

Reconsideration and reexamination are respectfully requested. It is believed that all pending claims 12-26 are now in condition for allowance. Issuance of a Notice of Allowance in due course is respectfully requested. If a telephone conference would be of assistance, please contact the undersigned attorney at 612-359-9348.

Respectfully submitted,



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